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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,175	12/04/2001	Ronald J. Capik	Capik 2-8	2844

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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/006,175

Applicant(s)

CAPIK ET AL. 

Examiner

Kevin S Wood

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9,12,13,15-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12,13,15,16,22 and 24 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,9,17,18,20,21 and 23 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

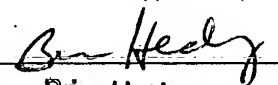
Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: 

DETAILED ACTION

Response to Amendment

1. This action is responsive to the applicant's amendment filed on 25 September 2003. Claims 1, 4, 12, 15, and 17 are amended. Claims 3, 10, 11, 14, and 19 are now cancelled. New claims 22-24 are now added. Claims 1, 2, 4-9, 12, 13, 15-18, and 20-24 are currently pending in the application.

Response to Arguments

2. Applicant's arguments, filed 25 September 2003, with respect to claims 12, 13, 15 and 16 have been fully considered and are persuasive. The rejections/objections of claims 12, 13, 15, 16, 22 and 24 have been withdrawn.

3. Applicant's arguments filed on 25 September 2003 with respect to claims 1, 2, 4, 5, 9, 17, 18, 20 and 21 have been fully considered but they are not persuasive. The examiner believes that the prior art reference includes or makes obvious all the limitations of the claimed invention.

For claims 1, 2, 4, 5, 9, 17, 18, 20 and 21, the applicant's primary argument is Fan et al. does not teach or suggest "adapting beam steering parameters associated with a medium to reduce optical loss in response to an optical loss parameter determined using data provided by first and second imaging devices". The examiner agrees that Fan et al. does not appear to specifically disclose the adapting of beam steering parameters (the MEMS mirrors) in response to an optical loss parameter

Art Unit: 2874

(failure). However, the examiner believes it would have been obvious to a person having ordinary skill in the art at the time the invention was made to take some sort of action to correct the mirror failures when they are detected by the system disclosed by Fan et al. Since the purpose of the monitoring system disclosed by Fan et al. is for detecting failures, it would have been obvious that once a failure was detected, corrective action should and would be taken. The applicant's argument seems to imply that a failure detected within the Fan et al. device would be ignored. The examiner believes that it would be clearly be obvious to one skilled in the art to adjust the MEMS mirrors when a failure is detected in order to fix the switch and make if fully functional.

Drawings

4. New corrected drawings are required in this application because of the informalities shown in the Notice of Draftsperson's Patent Drawing Review attached to this action. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement figures which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the

Art Unit: 2874

changes made must be presented either in the drawing amendments, or remarks, section of the amendment. Any replacement drawing sheet must be identified in the top margin as "Replacement Sheet" and include all of the figures appearing on the immediate prior version of the sheet, even though only one figure may be amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and centered within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheets must be clearly labeled as "Annotated Marked-up Drawings" and accompany the replacement sheets.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings **MUST** be filed within the **THREE MONTH** shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may **NOT** be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 is dependent upon claim 14, which was canceled by the applicant's amendment. Claim 23 is unclear because it cannot be dependent upon a canceled claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 2, 4, 5, 9, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,449,406 to Fan et al.

Referring to claims 1 and 17, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses a method of determining optical amplifier failures that includes the steps of: arranging a plurality of light beams according to a parallel configuration; diverting a first portion of the parallel light beams to a first imaging device (1020); propagating a remaining portion of the propagated parallel light beams through a medium; diverting a first portion of the propagated light beams to a second imaging device (1010); and determining the power loss using the data provided by the first and second imaging devices. See Fig. 10 A, along with its respective portion of the specification. Fan et al. does not appear to specifically disclose the adapting of beam steering parameters in response to an optical loss parameter. However, the examiner believes it would involve only routine skill in the art to recognize that when a failure occurs, a repair or adjustment should be made to the MEMS mirrors to make the switch operational. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to adjust the MEMS mirrors in response to a detected failure, in order to make the switch fully operational and have the switch operating at its desired peak efficiency.

Referring to claims 2 and 18, Fan et al. discloses all the limitations of the claimed invention, except Fan et al. does not appear to disclose that the photodetectors are made of Indium Gallium Arsenide (InGaAs). It is known within the art that InGaAs photodiodes can be used at high wavelengths because their smaller band-gap energies let them respond to less-energetic photons. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize photodetectors

made of InGaAs within the device disclosed by Fan et al., since InGaAs photodetectors are capable of efficiently operating at the desired longer wavelengths (1000 nm -1700 nm) typically used in modern optical systems.

Referring to claim 4, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the micromirrors are used to reflect the remaining portion of the parallel light beams through the medium. See Fig. 10 A.

Referring to claim 5, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the MEMS switching devices are a free space switch. See the figures of the reference.

Referring to claim 9, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the imaging devices are arrays of photo detectors. Photodetectors, such as photodiodes, are known in the art to produce an output level proportional to the excitation level induced by the received optical signal. See the figures of the reference.

Referring to claims 20 and 21, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses a power monitoring apparatus, comprising: a first imaging device (1020); a steering device (MEMS array); a second imaging device (1010); and the power loss being determined by the data from the first and second imaging devices. See Fig. 10 A, along with its respective portion of the specification.

Allowable Subject Matter

10. Claims 12, 13, 15, 16, 22 and 24 are allowed.

Art Unit: 2874

11. Claims 6-8, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm). Any attempts to call the examiner after 12 January 2004 should be directed to (571) 272-2364.

Art Unit: 2874

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW

A handwritten signature in black ink, appearing to read "Brian Healy". The signature is fluid and cursive, with the first name "Brian" and last name "Healy" clearly distinguishable.

Brian Healy
Primary Examiner